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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Jeroen Martijn Van Vugt

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EXAMINER

PHU, SANH D

ART UNIT

PAPER NUMBER

2618

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/564,462	VAN VUGT, JEROEN MARTIJN	
	Examiner	Art Unit	
	Sanh D. Phu	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed on 3/30/07.

Accordingly, claims 1-14 are currently pending.

Claim Rejections – 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 5-9 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by (EP 1206104), previously cited.

-Regarding to claim 1, see figures 1, 3-5, and [0019-0032], Appel et al discloses a method for measuring a talking quality of a communication link (comprising (10) (see figure 1)) in a communications network, the method (see figure 3) comprising:

a main step (comprising (31)) of subjecting a degraded speech signal ($s'(t)$) with respect to a reference speech signal ($s(t)$) to an objective measurement technique (32) for measuring a perceptual quality of speech signals ($s(t)$, ($s'(t)$), and producing a quality signal (q) which represents an estimated value concerning the talking quality degradation; the degraded speech signal ($s'(t)$) comprising a returned signal ($r(t)$); in which the objective measurement technique comprises a step (40, 41, 42) of modeling masking effects in consequence of noise present in the returned signal comprising the determination of a threshold noise level ($T(ne)$), by determining a local minimum noise value (Ne) of the degraded speech signal ($s'(t)$) (see [0019–0028]).

–Regarding to claim 2, Appel et al discloses that the reference speech signal $s(t)$ comprises a silence period and the threshold noise level is determined in the part of the degraded speech signal $s'(t)$ corresponding to the silence period among “silent intervals” in the reference speech signal $s(t)$ (see [0025]).

-Regarding to claim 5, Appel et al discloses that the threshold noise level is estimated as local minimum values ($T(N_e)$) of successive parts "frames" of the degraded speech signal $s'(t)$ (see [0025-0026]).

-Regarding to claim 6, in Appel et al, the threshold noise level is estimated as the local minimum value of the degraded speech signal $s'(t)$ in a predefined value range which corresponds to the range of estimated noise value (N_e) in a relationship of $T(N_e) = C_f \cdot N_e$ (see 0027]).

-Regarding to claim 7, Appel et al discloses that the main step comprises: a first processing step (39) of processing the degraded speech signal $s'(t)$ and generating a first representation signal $R'(t, f)$; a second processing step (38) of processing the reference speech signal $s(t)$ and generating a second representation signal $R(t, f)$; a step (32a) of subtracting the first representation signal from the second representation signal as to produce a difference signal $D(t, f)$; a first substep (41) of producing an estimated value N_e of the loudness of the noise present in the returned signal; and a second substep (42) of noise suppression carried out on the difference signal using said produced estimated value N_e as to produce the modified difference signal

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$D'(t,f)$; and a step (32c) of integrating the modified difference signal $D'(t,f)$ with respect to frequency and time as to produce the quality signal q (see figure 3).

—Regarding to claim 8, as similarly applied to claims 1, 2, 5–7, set forth above and herein incorporated, see figures 1, 3–5, and [0019–0032], Appel et al discloses a device for measuring a talking quality of a communication link (comprising (10)) (see figure 1) in a communications network, the device comprising measurement means connected to the communication link, the measurement means being arranged to subject a degraded speech signal $s'(t)$ (see figure 3) with respect to a reference speech signal $s(t)$ to an objective measurement technique for measuring a perceptual quality of speech signals, and producing a quality signal (q) which represents an estimated value concerning the talking quality degradation; the degraded speech signal comprising a returned signal $r(t)$; in which the measurement means are arranged to execute the objective measurement technique by modelling masking effects in consequence of noise present in the returned signal in which the objective measurement technique comprises the determination of a

threshold noise level by determining a local minimum value of the degraded speech signal $s'(t)$.

-Claim 9 is rejected with similar reasons set forth for claim 2.

-Claim 12 is rejected with similar reasons set forth for claim 5.

-Claim 13 is rejected with similar reasons set forth for claim 6.

-Regarding to claim 14, Appel et al discloses first processing means (39) for processing the degraded speech signal $s'(t)$ and generating a first representation signal $R'(t,f)$, the first representation signal $R'(t,f)$ being a representation signal of a signal combination of the talker speech signal and the returned signal; second processing means (38) for processing the talker speech signal $s(t)$ and generating a second representation signal $R(t,f)$; combining means (32) for combining the first and second representation signals as to produce said output signal q , the combining means including subtracting means (40) for subtracting the first representation signal from the second representation signal as to produce a difference signal $D(t,f)$; modelling means (41, 42) for modelling the masking effects carried out on the difference signal as to produce a modified difference signal, including means (41) for

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producing an estimated value N_e of the loudness of the noise present in the returned signal, and means (42) for carrying out a noise suppression on the difference signal using said produced estimated value N_e , and for producing the modified difference signal $D'(t,f)$; and integrating means (43) for integrating the modified difference signal with respect to frequency and time as to produce the quality signal q (see figure 3).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 4, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Appel et al.

-Regarding to claims 3 and 10, Appel et al does not disclose whether the silence period is provided at the start of the reference speech signal $s(t)$, as claimed.

However, Appel et al teaches that the silence period is happened during the occurrence of the speech signal $s(t)$ and able to be set and determined via the silence of the talker in the speech (see [0025]).

It would have been obvious for a person skilled in the art, within his skills, for the purpose of measurement the talking quality, to choose setting at least a silent period at the start of the speech signal $s(t)$ and subsequent silent periods during the speech signal so that the noise value (N_e) can be estimated, as required, by being based on these silent periods.

-Regarding to claims 4 and 11, Appel et al does not teach whether the silence period has a duration of at least 0.5 sec, more preferably at least 0.9 sec.

However, since Appel et al teaches that in the measurement, the speech signal can be processed in frame-wise of length between 10 and 100 ms (see [0019]) and Appel et al is silent about the duration the silence period, it would have been obvious for a person skilled in the art, within his skills, to choose the speech signal to be processed in frames of length, e.g. 100 ms, and set the silence period equal multiple of frames, (so that it would be captured easily for

processing), e.g., set the silence period equal 0.5 sec, so that the noise value (N_e) can be estimated, as required, by being based on said silent period.

Response to Arguments

6. Applicant's arguments filed on 3/30/07 have been fully considered but they are not persuasive.

The applicant mainly argues that Appel et al fails to teach a determination of a threshold noise level by determining a local minimum value of a degraded speech signal.

The examiner respectfully disagrees. As being explained above in this Office Action, Appel et al teaches a determination of a threshold noise level ($T(N_e)$) by determining a minimum noise value N_e (see [0025]), wherein the minimum noise value N_e can be called here as a local minimum value of a degraded speech signal ($s'(t)$) because N_e is the noise portion of the signal ($s'(t)$) (see [0023]) and N_e is a minimum value found in frames of signal $R'(r,f)$, which is the loudness density function presenting the signal ($s'(t)$) (see [0024–0025]). Further, it is important to note here that neither the specification of the instant application nor corresponding claims provide any other description or

recitation for further defining the "local minimum value" in order to make the "local minimum value" of a degraded speech signal distinguishable from Appel et al local minimum value N_e of the degraded speech signal ($s'(t)$).

Based on the above rationale, it is believed that the limitations of claims are still met and therefore, the rejections are still maintained.

Conclusion

7. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanh D. Phu whose telephone number is (571)272-7857. The examiner can normally be reached on M-Th from 7:00-17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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SP

SANH D. PHU
PATENT EXAMINER

5/31/07

